FIG.1

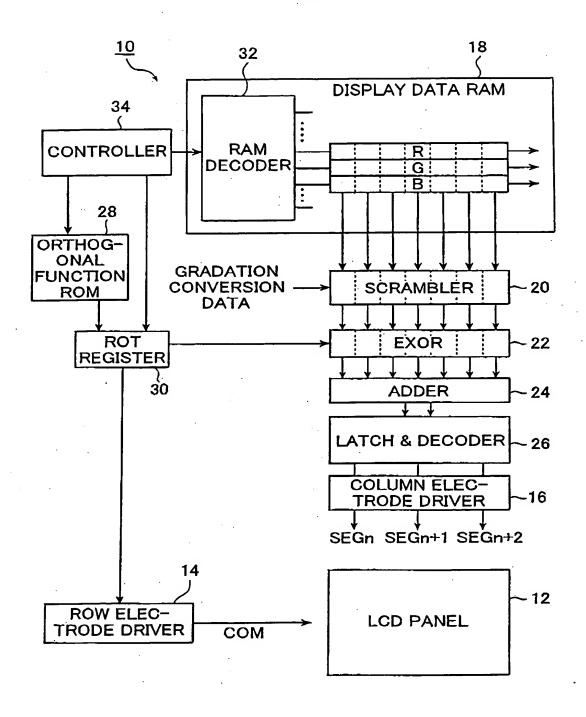


FIG.2A

FIG.2C

| TIONA | AR4 | 1- | 1-1 | _ | <u> </u> - |
|------------------------|------------|-----|-----|-----|------------|
| FUNC | AR3 | 1 | 1- | ļ | ļ |
| DRITHOGONAL FUNCTION A | AR2 | 1 | 1-1 | -1 | -1 |
| ORTHO | ARI | 1 | 1 | 1 | |
| | | AC1 | AC2 | AC3 | AC4 |

FIG.2B

| | | | _ | | | |
|--|-----------------------|---------|-----|-----------|----------------|------------|
| | | | | | | |
| | TON B | BR4 | ļ | 1 | - | <u> </u> - |
| | ORTHOGONAL FUNCTION B | BR3 BR4 | ļ- | 1 | 1 | 1 |
| | GONA | BR2 | 1- | - | - | 1 |
| | ORTHO | BR1 | 1 | 1 | - | 1 |
| | | | BC1 | BC2 | BC3 | BC4 |

| | | | | | | | | | | | | | | | | $\overline{}$ |
|---------|--------|-------------------|--------------------|-----------------------|----------|------------|------------|------|--------|------------|----------|----------|----------|-------|--|---------------|
| | 0. | TIME PERIOD 3 | ELECTION | DIVIDED S | 0 | 0 | 9 | 0 | 9 | 9 | 9 | 9 | 4 | (12 | 4 | |
| | FIEL | ROW SELECTION | ELECTION | DIVIDED S | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | α | ם ב | | |
| | | TIME PERIOD 2 | ELECTION | 39 3MIT | 0 | 0 | 0 | 0 | < | < α | 2 | | 9 | 0 | 9 | 0 |
| | FOURTH | ROW SELECTION | ELECTION | DIVIDED S | 0 | 0 | 0 | 0 | | ם מ | : — | | 0 | 0 | 0 | 0 |
| | JU. | TIME PERIOD 1 | ELECTION RIOD 2 | TIME PE | • | ΑD | 7 4 | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | FC | ком зегесттом | ELECTION | PE PE | | D U | د «: | > | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | (| TIME PERIOD 3 | ELECTION 2 | DIVIDED S | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | < | < D | 2 | |
| | | ROW SELECTION | ELECTION (| 39 3MIT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | C | 0 0 | - | |
| | FIE | TIME PERIOD 2 | RIOD 2 | | 0 | 0 | 0 | 0 | • | < D | 4 | | 0 | 0 | 0 | 0 |
| щ | 3 | ROW SELECTION | ו מסוא: | DINDED 2 | 0 | 0 | 0 | 0 | Ľ | ם מ | _ ຕ | | 0 | 0 | 0 | 0 |
| CYCLE | THIRD | 1 GOIR39 3MIT | RIOD 2 | | | ۵ ا | ۲ د | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Ι- | ROW SELECTION | FIOD I | DIVIDED SI | | 9 0 | ۲ – | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Α | a. | E DOIRE PERIOD 3 | | DIVIDED SI | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | מ | ם מ | <u> </u> | |
| DISPLAY | 띮 | вом зегесттои | RIOD 1 | is dadivio as amit | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | _ | < D | < m | |
| 510 | | S GOIRAR PERIOD 2 | ELECTION | S OBOIVIO | 0 | 0 | 0 | 0 | _ (| ם מ | ۲ م | 1 | 0 | 0 | 0 | 0 |
| | COND | ROW SELECTION | ELECTION | DIVIDED SI | 0 | 0 | 0 | 0 | ــــــ | ∀ □ | | | 0 | 0 | 0 | 0 |
| | ပ္ပ | TIME PERIOD 1 | FIOD S | DIVIDED S | | B C | ۲ 4 | ۲ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | SE | ROW SELECTION | NOITOBJE | DIVIDED SE | | | <u> </u> | _ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | D | TIME PERIOD 3 | | DIVIDED S | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | - | ם מ | ر م | 1 |
| | | ROW SELECTION | NOITOBLE | DIVIDED SI | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | <u> </u> | V O | | - 10 |
| | FIE | S GOIR34 3MIT | ELECTION | S OBOIVIO | 0 | 0 | 0 | 0 | | 20 0 | | | 0 | 0 | 2 | |
| Ť | ST | ROW SELECTION | ELECTION | S OBOIVIO | 0 | 0 | 0 | 0 | | A | , | | 0 | 0 | 0 | 0 0 |
| | FIR | TIME PERIOD 1 | ELECTION | OIVIOED SE | <u> </u> | | <u>د د</u> | | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 |
| | | ROW SELECTION | NOITOBLE | S GEOIVIO BA BMIT | نــــا | Α C | ۲ - | - | 0 | 0 | 0 | 0 | | | <u> </u> | |
| | | • | | | × | % | ROW3 | ROW4 | ROW5 | ROW6 | M | ROW8 | ROW9 | ROW10 | \(\overline{1}{5} \overline{1} \overline{1}{5} \overline{1} \overline{1}{5} \overline{1} \overline{1} \overline{1} \overline{1} 1 | ROW12 |
| | | | | | ROW | ROW2 | <u>8</u> | 윤 | | 윤 | ROW7 | | | | ROWI | |
| | | | | | 1~ | • | \ | | 1~ | | | ~ 1 | | - 1 | | \sim |

FIG. 3

| Columbe Colu | 0 0 0 1 1 1 |
|--|-------------|
| О О О О О О О О О О О О О О О О О О О | 00 |
| O O O O O O O O O O O O O O O O O O O | 00 |
| - I ODADED SEI ECTION | |
| - I ODADED SEI ECTION | 00 |
| - I ODADED SEI ECTION | |
| | 00 |
| T T O O O O O O O O O O O O O O O O O O | 77 |
| | T |
| O O T T T O O O O JIME PERIOD 2 T O O O O DIVIDED SELECTION | 00 |
| TIME BERIOD I HOM SELECTION O O O O O O O O O O O O O O O O O O | 00 |
| S E I DOJUNE PERIOD I TALL DIVIDED SELECTION TIME PERIOD I E S | 00 |
| OI, MOTTOR 132 WORLD SELECTION BOW SELECTION IN SELECTION | 00 |
| TIME DEGIOD S. TIME DEGIOD S. TIME DEGIOD S. TIME DEGIOD S. T. T. T. O. | 77 |
| T T O O O O O O T T T T O O O O O T T T T O O O O O O T T T T O O O O O O T T T T O O O O O O T T O | |
| OOTTTTTOOODIANDED SELECTION TIME PERIOD 2 | 00 |
| O O T T T O O O DIVIDED SELECTION | 00 |
| O O O O O O O O O O O O O O O O O O O | 00 |
| | 00 |
| TTOOOODININE BEBIODS | 7 |
| TIME PERIOD 1 HOW SELECTION TO O O O O O O O O O O O O O O O O O | II |
| TIME PERIOD 2 TO O O O TO TO THE PERIOD 2 TO O O TO TO TO O O O TO TO TO O O O | 00 |
| O O O T T T O O O DIVIDED SELECTION | 00 |
| TIME PERIOD 1 O O O O O O O O O O O O O O O O O O | 00 |
| DOOO TO TO TIME PERIOD I ROW SELECTION TO COOO | 00 |
| 7 2 8 4 8 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 | V 22 |
| ROW1 ROW5 ROW9 ROW9 ROW9 | ROW11 |
| B - X - B - X 2/B - | × ε |

FIG.4A

| E E | ERN | CTION A) | · | | | | |
|-----------|-------|----------|--------|-----|----------|-----|----------|
| ELECTRODE | PATTI | FUNC | R3 AR4 | - | <u> </u> | | <u>-</u> |
| | TION | ONAL | AR2/A | 1 | 〒 | T | T |
| ROW | 2 | OG | ARI | | | | T |
| œ | SE | (ORTH | | ACI | AC2 | AC3 | AC4 |

| OLUMN SPONDING TO THE CORRE- DISPLAY PATTERN RESULT OF ELECTRODE EFFECTIVE VOLTA | COLUMN ELECTRODE | RESULT OF | DISPLAY PATTERN |
|---|---------------------|-----------|-----------------|
| VALUE CORRE- | | | |
| F.1.G. 4E | F.TG. 4D | F.1G.4C | FIG.4B |

| 2 | | | | | | | | | | | • | | | | | | |
|----------|-----|----------|-----|----|---|---|----|---|----|---|----|----|----|----|----|----|----------|
| _ | R4 | 2 | 7 | 7 | 7 | 7 | -2 | 7 | -2 | ~ | 7 | 7 | -2 | 7 | -2 | 7 | -2 |
| > | 83 | 7 | 7 | -5 | 7 | 7 | 7 | 7 | -2 | 7 | 7 | -5 | 7- | 7 | 7 | -2 | 7- |
| <u> </u> | 82 | 2 | 7 | 7 | 2 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | -5 | -2 | -5 |
| כ | ₩ | 7 | 7 | 7 | ~ | 7 | 7 | 7 | 7 | 7 | -5 | 7 | 7 | -5 | -2 | -2 | -7 |
| - | | | | | | | | | | | | | | | | | |
| _ | Z | | | | | | | | | | | | | | | | |
| 1 | TER | — | 0 | 7 | _ | 0 | Ŧ | _ | 0 | 0 | Ŧ | = | 0 | Ŧ | -2 | 0 | T |
| 1001 | PAT | | 0 | 0 | | | | | 0 | _ | | | | | _ | 0 | _ |
| - | 띯 | - | 0 | 0 | T | 0 | T | T | 7 | 7 | - | | 0 | · | 0 | 0 | <u> </u> |
| ו נ | LTA | - | 7 | 0 | ī | 0 | T | - | 0 | 0 | T | - | 0 | - | 0 | 7 | · - |
| | 5 | | | | | | | | | | | | | | | | |
| | Z | رح ا | _ | 4 | - | _ | - | _ | _ | _ | 7 | 2 | _ | - | 4 | _ | 7 |
| | Ó | 1 | . — | Ĩ | T | | | - | _ | _ | | 1 | | | _ | | |

| _ | \cong | | | 1 | ı | | | , | | | | ı | | | | | |
|-------------|--------------|----|---|----------|----------|---|----------|----|----------|---|----|----|----|----|---|----|----|
| > | RAT | 7 | 0 | 0 | -2 | 4 | ~ | 7 | 0 | 0 | -2 | ? | 4- | 7 | 0 | 0 | -7 |
| ן ר |)PEI | 7- | 0 | 0 | 7 | 0 | 7 | 7 | 7 | 4 | ? | 7 | 0 | 7- | 0 | 0 | 7 |
| ز | MLA OPERATIC | 7 | 4 | 0 | 7 | 0 | ~ | -5 | 0 | 0 | 7 | -2 | 0 | -2 | 0 | 4- | -5 |
| | Ξ | | | | | | | | | | | | | - | | | |
| = | | | | | | | | | | | | | | | | | |
| | R4 | - | T | - | T | ~ | T | _ | T | _ | T | _ | T | - | T | _ | T |
| = | R3 | - | _ | 1 | T | _ | _ | T | T | _ | - | T | ī | - | _ | T | T |
| - | R 2 | - | • | ← | - | T | T | ī | T | _ | - | - | - | T | T | T | T |
| | 쮼 | | - | - | | - | _ | - | - | Τ | 7 | T | T | ┰ | Ť | Τ | T |
| 5 | | | | | | | | _ | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |

5

FIG.5A

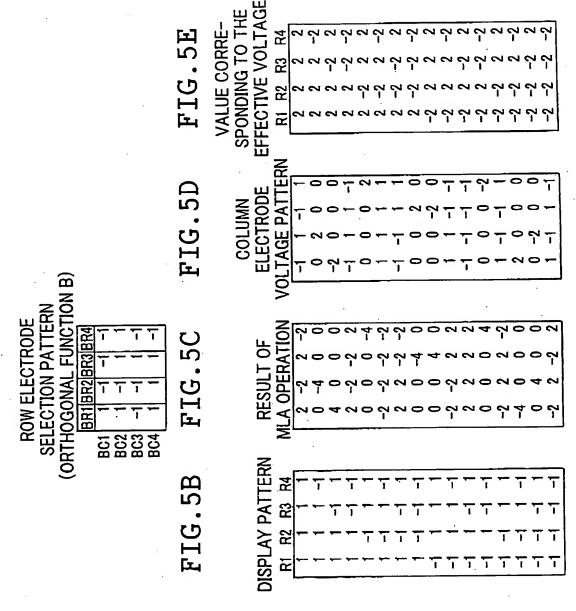


FIG.6A

ORTHOGONAL FUNCTION B BR1|BR2|BR3|BR4|BR5|BR6|BR7|BR8

FIG.6B

| | AR8 | 1- | 1 | - | 1- | 1 | - | ļ- |
|-----------------------|---------|----|-----------|-----------|----|----|-----------|------------|
| A NC | AR7 AR8 | -1 | -1 | 1 | 1 | 1- | - | <u> </u> - |
| CTI | AR5 AR6 | 1 | - | 1- | 1- | -1 | 1- | -1 |
| E. | AR5 | -1 | 1 | -1 | - | -1 | 1 | - |
| ONAL | AR4 | -{ | -1 | -1 | -1 | 1 | -1 | 1 |
| 10G(| AR3 | -1 | 1 | -1 | 1 | -1 | -1 | 1 |
| ORTHOGONAL FUNCTION A | AR2 | -1 | -1 | 1 | -1 | -1 | 1 | 1 |
| | AR1 AR2 | -1 | -1 | 1 | 1 | | 1 | -1 |

ī

FIG.6C

| | CR8 | -1 | 1 | -1 | 7 | 1 | 7 | 1 |
|-----------|------------|----|------------|-----------|-------------|----|-----------|----|
| TION C | CR7 CR8 | 1- | 1 - | ļ- |]- - | 1 | 1 | 1- |
| CTIC | CR6 | ۱- | 1- | 1 | -1 | ا- | - | 1- |
| FUNCT | CR4 CR5 | 1 | - | ۱- | 1 | ۱- | 1- | ļ- |
| JNAL | CR4 | -1 | 1 | - | -1 | -1 | - | 1 |
| ORTHOGONA | CR3 | ļ- | 1 | ا–را | 1 | ļ- | 1 | 1- |
| ORTH | CR2 | 1 | 1 | -1 | -1 | 1 | - | -1 |
|) | CR1 | Ţ | 1- | 1- | 1- | 1- | 1 | 1 |
| | | | | | | _ | | |

FIG.6D

| | | | | _ | | _ | _ | |
|------------|--------|----|----|----|----|-----------|-------------|----|
| _ | DR8 | _ | Т | T | T | | | ī |
| ION D | DR7 | -1 | -1 | 1 | 7 | -1 | | _ |
| CII | DR6 | T | -1 | -1 | 1 | - | -1 | T |
| FUNCT | DR5 | -1 | 1 | -1 | -1 | 1 | -1 | - |
| NAL | DR4 | 1 | -1 | 1 | 1- | - | -1 | 1- |
| 200 | DR3DR4 | -1 | 1- | 1 | 1- | 1 | l- | 1 |
| ORTHOGONAL | DR2 | T | - | 1 | -1 | - | 1 | ļ- |
| | DR1 | _ | | -1 | 1 | 1- | <u> </u> -1 | - |

FIG. 7

| | | | | TIME PERIOD 4 | 10 | 0 | 0 | ठा | 01 | 0 | ठा | | | | 2 | | | |
|---------|--|----------------|---------------|-------------------------------------|---------------|------|------|------------|----------|------|---------|----------|----------|-------|-----------|----------|----------|----------|
| | | N | 2 | DIVIDED SELECTION | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | \dashv |
| | | 85 | | DIVIDED SELECTION | | | | | | | | | | | <u> </u> | | | \dashv |
| | FIE | | | DIVIDED SELECTION TIME PERIOD 2 | 0 | 0 | 0 | 9 | 9 | 9 | 의 | | | | <u> </u> | | | _ |
| | | SE | <u>a</u> | DIVIDED SELECTION | 0 | 0 | 0 | 0 | <u> </u> | 0 | | | | | α ۲ | | | |
| | IRTH | NO | _ | LIME DEBIOD ¢ DIVIDED SELECTION | | | 0 | X 1 | _ | | | 0 | 9 | 9 | 9 | 9 | | |
| İ | | l≥⊏ı | | DIVIDED SELECTION | | | ပ | A. | 9 | | | 0 | 0 | 9 | 0 | 9 | 이 | 의 |
| | IS I | SH SH | | TIME PERIOD 2 | | | B | 2 | 2 | | | 0 | 0 | 0 | 0 | 0 | 이 | 0 |
| | | S | 品 | TIME PERIOD I | | | A | <u>m</u> | 4 | | | 0 | 0 | 0 | 0 | 0 | 0 | 미 |
| | | NO | 7 | DIVIDED SELECTION TIME PERIOD 4 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | | | | 出 | _ | | |
| 1 | | | | TIME PERIOD 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | ပ | <u></u> | 9 | | |
| | 2 | ROW ECT | | DIVIDED SELECTION DIVIDED SELECTION | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | æ | R i | ဂ | | |
| | 쁜 | 딩 | 品 | TIME PERIOD 1 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | | | × | 民. | 4 | | |
| | | NO | | TIME PERIOD 4 | 1 | | | ~ | 9 | l | | 0 | 0 | 0 | 0 | 0 | 9 | 0 |
| بدا | THE | | IOD I | TIME PERIOD 3 | 1 | | ပ | K | വ | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| [] | = | ROW | | TIME PERIOD 2 | | 1 | æ | æ | 4 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| CYCL | | | PE | TIME PERIOD 1 | | | A | R | က | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | NO SNO | 2 | TIME PERIOD 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | ٥ | 2 | 9 | | |
| 급 | ۵ | >은 | | TIME PERIOD 3 | 0 | ठ | 0 | 0 | 0 | 0 | 0 | | | ပ | \propto | r. | | |
| DISPLAY | 프 | ROW | | DIVIDED SELECTION TIME PERIOD 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | В | 2 | 4 | | |
| | _ | | PE | TIME PERIOD 1 | 0 | Ó | 0 | 0 | 0 | 0 | 0 | | | A | R | က | | - |
| | 닐 | NO | _ | DIVIDED SELECTION | $\overline{}$ | | ۵ | Œ | 5 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | SECOND | _≥ ≓ | # <u>0</u> | TIME PERIOD 3 | . 1 | | ပ | Œ | 4 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | SE | ROW | $=$ \propto | TIME PERIOD 2 | T | | В | 2 | က | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | | SEL | 占 | TIME PERIOD 1 | | | A | R | 7 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | NO | 7 | TIME PERIOD 4 OLVIDED SELECTION | 10 | 0 | 0 | 0 | 0 | 0 | 0 | | | Ω | 2 | ις. | | |
| | | | | TIME PERIOD 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | _ | Ö | R | 4 | | |
| | | ROW | | TIME PERIOD 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | œ | R | က် | | |
| | FIE | ш | 占 | TIME PERIOD 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | V | α | 2 | | |
| | | ONS | | TIME PERIOD 4 | 1 | 1 | | R | 4 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | FIRST | 돈 | ם פני | LIME PERIOD 3 | 1 | | | 2 | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 日 | ROW | | TIME PERIOD 2 | | | | 2 | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | SELĮ | PERIOD | DIVIDED SELECTION I | +- | - | | <u>~</u> | | | | 0 | 0 | 0 | 6 | 0 | 0 | 0 |
| لـــا | | S | | DIVIDED SELECTION | T | 2 | _ | 1 | 1 | و | <u></u> | <u>∞</u> | 6 | 9 | = | 2 | 8 | <u>=</u> |
| | | | | | ROWI | ROW2 | ROW3 | ROW4 | ROWS | ROW6 | ROW7 | ROWS | ROW9 | ROWIO | ROW | ROWI | ROWI3 | ROW14 |
| | | | | | R | TK. | | LIE | | | 10 | 1 12 | <u> </u> | 1 4 | 1 | <u> </u> | <u> </u> | |

FIG.8

| | | | | | | | | | | _ | | | | | | | |
|---------|---------|---------------------|----------------------------------|---|---|---|----------|----------|---|---|---|----|----------|--------------|---|----|---|
| | | NC 2 | DIVIDED SELECTION | 0 | 0 | 0 | 0 | 0 | 9 | | | | | <u>æ</u> . | 4 | | _ |
| | | SE NO | DIVIDED SELECTION | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | ပ | <u>a</u> | က | | |
| | | $ \alpha_m $ | DIVIDED SELECTION | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 8 | <u>a</u> | 7 | | |
| | FIE | S H | DIVIDED SELECTION 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | A | <u>~</u> | | | |
| | H | N - | DIVIDED SELECTION | | | ۵ | R | က | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | EIGHTH | المرات المحاد | DIVIDED SELECTION | | | O | 2 | 7 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 回 | | TIME PERIOD 2 | | | B | 2 | - | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | DIVIDED SELECTION | | | 4 | 2 | ∞ | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 N | TIME PERIOD 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 8 | က | | |
| | Q. | SE NO | TIME PERIOD 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | Ç | R | 2 | | |
| | FIEL | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 8 | α | _ | | |
| | | IN IN | TIME PERIOD 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | A | \mathbf{x} | ∞ | | |
| | SEVENTH | NO - | DIVIDED SELECTION | | | Ω | α | 7 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| CYCLE | ΥE | · | TIME PERIOD 3 DIVIDED SELECTION | | | ပ | œ | - , | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ΥC | S | RECT SECOND | LIME PERIOD 2 TIME PERIOD 2 | | | 8 | 吖 | <u></u> | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| S | | SEI | DIVIDED SELECTION | | | ⋖ | R | _ | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| DISPLAY | | 0N 2 | 1407707 120 020040 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | <u>~</u> | 2 | | |
| S | | ROW TIME RIOD | LIME PERIOD 3 DIVIDED SELECTION | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | <u>ပ</u> | <u>~</u> | _ | | |
| ă | | , <u>Ш</u> | DIVIDED SELECTION | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | <u>R</u> | | | |
| | FE | S | DIVIDED SELECTION | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | R | , | - | · |
| | SIXTH | NO - | DIVIDED SELECTION | | | _ | <u>~</u> | _ | | | 0 | 0 | 0 | 0 | 0 | 10 | 0 |
| | SI | | DIVIDED SELECTION | | | | <u>m</u> | | | | 9 | 0 | 0 | 9 | 0 | 0 | 0 |
| | | | DIVIDED SELECTION TIME PERIOD 2 | | _ | | R | | | | 0 | 0 | 0 | 0 | 0 | ļ | 0 |
| | | SE | DIVIDED SELECTION | | | | 띴 | | _ | | 0 | 0 | <u> </u> | | | 10 | |
| | | 10N | DIVIDED SELECTION | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | <u>~</u> | | | |
| | | SE WOO | DIVIDED SELECTION | 0 | 0 | 0 | 0 | | 0 | 0 | ļ | | | 2 | | | |
| | | ELE FI | DIVIDED SELECTION | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | <u>~</u> | | | |
| | 工 | SE | DIVIDED SELECTION | 0 | 0 | 0 | 0 | | | 0 | _ | _ | | <u> </u> | | 1 | _ |
| | FIFTH | 0 1 | DIVIDED SELECTION | | | | <u>m</u> | | | | 0 | 10 | 0 | <u> </u> | | 6 | 6 |
| | 남 | 왕당발망 | DIVIDED SELECTION | | | | <u>α</u> | | | | 0 | 0 | 0 | 0 | | | L |
| | | SHEET. | LIME PERIOD 2 DIVIDED SELECTION | | | | 四 | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | | - - - | DIVIDED SELECTION | | | ⋖ | œ | 3 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

FIG.9A

ROW ELECTRODE SELECTION PATTERN (ORTHOGONAL FUNCTION A)

| AR1 | AR2 | AR3 | AR4 | AR5 | AR6 | AR7 | AR8 |
|-----|-----|----------|------------|-----|---------|----------|-----|
| -1 | -1 | -1 | 7 | -1 | 1 | -1 | -1 |
| -1 | -1 | 1 | -1 | 1 | -1 | -1 | 1 |
| -1 | 1 | -1 | -1 | -1 | -1 |] |] |
| 1 | -1 | 1 | <u>-</u>] | -1 | -1 |] | -] |
|] | -1 | -1 | | -1 | - | [] | _{ |
| _1 | | - | - | _i | - | =; | = |
| | | <u>'</u> | | | <u></u> | <u>'</u> | انط |

| FIG.9B | FIG.9C | FIG.9D | FIG.9E |
|---------|-----------|--------|-----------------------|
| | | COLUMN | VALUE CORRESPONDIN |
| DISPLAY | RESULT OF | | TO THE EFFECTI |

| | | | CORRESPONDING |
|---|---|---|---|
| DISPLAY | RESULT OF | ELECTRODE TO | O THE EFFECTIVE |
| PATTERN | MLA | VOLTAGE | VOLTAGE |
| R1 R2 R3 R4 R5 R6 R7 | OPERATION | PATTERN | R1 R2 R3 R4 R5 R6 R7 |
| 1 1 1 1 1 1 1 | -1-1-1-3-3-5-3-1 | 11111311 | 4 4 4 4 4 4 4 |
| 1 1 1 1 1 1 1-1 | 1 1-3-3-5-1-3-1 | -1 | 4 4 4 4 4 4 4 4 4 |
| 1 1 1 1 1 1-1 1 | -3-3 1-1-5-3-1 1 -1-5-1-3-3-1 1 3 | 1 1-1 1 3 1 1-1 | 4 |
| | -3 | 11-1-131111 | 4 4 4 4 4 4 4 4 |
| 1 1 1 1-1 1-1 | -1-1-1-7 1-1 1-1 | 1 1 1 3-1 1-1 1 | 4 4 4 4 4 4 4 4 4 |
| 1 1 1 1 1 1 -1 -1 1 | -5-1 3-3-3-1 1-1 -3-3 1-5-1 1 3 1 | 3 1-1 1 1 1-1 1 | 4 |
| 1 1 1 1 1 1 1 1 1 1 | -3 1 -3 -1 -1 -3 -5 1 | 1 1 -1 1 1 1 1 3 -1 | 4 4 4 4 4 4 4 |
| 1 1 1 1 1 1 1 1 1 | -1-1-5-3 1-1-3 3 | 1 1 3 1-1 1 1-1 | 4 4 4 4 4 4 4 4 4 |
| 1 1 1 1 1 1 1 1 1 1 | -5-1-1 1-3-1-3 3 -3-3-3-1-1 1-1 5 | 3 1 1-1 1 1 1-1 | 4 4 4 4 4 4 4 4 4 4 |
| 1 1 1-1 1-1-1 | -53-1-31-1-3-1 | 3-1 1 1 1 1 | 4 4 4-4-4 4 4 |
| i i i i i i i i | -3 1-3-5 3 1-1 1 | 1-1 1 3-1-1 1-1 | 4 4 4 4 4 4 4 4 4 4 4 |
| 1 1 1 1 1 1 1 1 1 | -7 | 3-1-1 1 1-1 1-1 3 1 1 1-1-1-1 | 4 4 4-4-4-4 |
| 1 1-1 1 1 1 1 | 1-3 1-1-1-3-5-3 | -1 1-1 1 1 3 1 | 44-44444 |
| [j j-j j j j-1 | 3-5-1-3 1-1-3-1 | -1 3 1 1-1 1 1 1 1 3-1-1 1 1 1 1 | 4 4 - 4 4 4 4 - 4 4 |
| 1 1-1 1 1-1 1 | | 1 3-1-1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 4 4 4 4 4 4 4 4 4 |
| 1 1 1 -1 1 -1 1 1 | -i-i | 1 1-1 1-1 1 3 | 4 4-4 4-4 4 4 |
| : | .: | | |
| -1-1 1-1 1-1-1 | 1 1-3 3-1 1 3 5 | -1-1 1-1 1-1-1-3 | -4-4 4-4 4-4-4 |
| -1 <i>-</i> 1 | -1 7-1 1 1-1 1-1 | 1-3 1-1-1 1-1 1 | -4-4 4-4-4 4 4 |
| -1 -1 1 -1 1 -1 -1 -1 1 -1 -1 1 | 1 5-3-1 3 1 3 1 -3 5 1 3-1 1 3 1 | -1 -3 | -4-4 4-4-4 4-4 -4-4 4-4-4 4 |
| -1 -1 -1 -1 -1 -1 -1 1 -1 -1 -1 -1 | -3 5 1 3 -1 1 3 5 3 -1 3 -1 1 1 3 5 3 | 1 1 -1 1 -1 -1 -1 -3 -1 | -4-4 4-4-4-4 |
| | 5 1 1 3-1-3-1-3 | -3-1-1-1 1 1 1 1 | -4-4-4 4 4 4 4 |
| | 7-1-1 1 1-1 1-1 3-1 3 5-3-1 1-1 | -3 1 1-1-1·1-1 1 -1 1-1-3 1 1-1 1 | -4-4-4 4 4 4-4 -4-4-4 4 4-4 4 |
| -1 -1 -1 | 3-1 3 5-3-1 1-1 5-3 1 3-1 1 3 1 | -3 1-1-1 1-1-1 | -4-4-4 4 4-4-4 |
| -i-i-i i-i i i | 3 3 3 1 1-1 1-5 | -1-1-1-1 1-1 3 | -4-4-4 4-4 4 4 |
| 1-1-1-1-1-1 | 5 1 - 1 3 3 - 3 | -3-1-1 1-1-1 1 | -4-4-4 4-4 4-4 -4-4-4 4-4-4 4 |
| -1 -1 -1 1 -1 -1 1 -1 -1 -1 1 -1 -1 | 1 1 5 3-1 1 3-3 3-1 3 1 1 3 5-1 | -1 -1 -1 -1 -3 1 | -4-4-4-4-4-4 |
| | 3 3-1 5 1-1-3-1 | -1-1 1-3-1 1 1 1 | -4-4-4-4 4 4 4 |
| -1-1-1 1 1-1 | 5 1-3 3 3 1-1 1 | -3-1 1-1-1 1-1 -1-1-1-3 1-1 1-1 | -4-4-4-4 4 4-4 -4-4-4-4 4-4 4 |
| -1 -1 -1 -1 1-1 1 -1 -1 -1 -1 1-1 -1 | 1 1 1 7-1 1-1 1 3-1 -1 5 1 3 1 3 | -1 -1 -1 -3 | 4-4-4-4 |
| -1 -1 -1 -1 1 1 | 1 5 1 3 3 1-1-3 | -1-3-1-1-1 1 1 | -4-4-4-4-4 4 4 |
| -1 -1 -1 -1 1 -1 | 3 3-1 1 5 3 1-1 | -1-1 1-1-3-1-1 1 | -4-4-4-4-4-4-4-4 |
| -1 -1 -1 -1 -1 | -1 3 3 5 1 3 1-1 1 1 1 3 3 5 3 1 | 1-1-1-3-1-1-1 | -4 -4 -4 -4 -4 -4 -4 |
| -1 -1 -1 -1 -1 -1 | | <u> </u> | |

FIG. 10A

ROW ELECTRODE SELECTION PATTERN (ORTHOGONAL FUNCTION B)

| BR1 | BR2 | BR3 | BR4 | BR5 | BR6 | BR7 | BR8 |
|-----|-----|-----|-----|-----|-----|-----|-----|
| -1 | 1 | 1 | 1 | -1 | -1 | -1 | -1 |
| -1 | -1 | -1 | -1 | -1 | 1 | -1 | -1 |
| -1 | -1 | 1 | -1 | 1 | -1 | -1 | 1 |
| -1 |] | -3 | -1 | -] | -] |] |] |
| | -] | _1 | -1 | ! | | _4 | - |
| 1 1 | - | -1 | -1 | _ | _1 | | -1 |

FIG.10B FIG.10C FIG.10D FIG.10E

| DISPLAY PATTERN R1 R2 R3 R4 R5 R6 R7 | RESULT OF MLA OPERATION | | VALUE CORRESPONDING O THE EFFECTIVE VOLTAGE R1 R2 R3 R4 R5 R6 R7 |
|--|---|--|--|
| | -1 -1 -3 -3 -5 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -3 -1 -1 -3 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 | 1 1 1 1 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 |
| | 3 1 3 1 3 3 1 3 1 3 3 1 3 1 3 3 1 3 1 3 | -1 1-3 1-1-1-1-1 -1 1 1-1-3 1 1-1 -1 1 1-1-3 1 1-1 -1 1 1-1-1-1 1-3 -1-1-1 1-3-1 1-1 -3-1 1 1 1 1-1-1 -1 1 1-1 1 1-3-1 -1-1 1 1-1 1-1-3-1 -1-1 1 1-1 1-1-3-1 -1-1 1-1 1-1-1-3-1 -1-1 1-1 1-1-1-3-1 -3 1 1-1 1-1-1-1 -3 1 1-1 1-1-1-1 -3 1 1-1 1-1-1-1 -3 1 1-1 1-1-1-1 -1 1 1-3-1-1 1 -1 1 1-3-1-1 1 -1 1 1-3-1-1 1 -1 1 1-1-1-1-1 | -4 -4 4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4 |

FIG.11A

ROW ELECTRODE SELECTION PATTERN (ORTHOGONAL FUNCTION C)

| CR1 | CR2 | CR3 | CR4 | CR5 | CR6 | CR7 | CR8 |
|-----|-----------|-----|-----|-----|-----|-----|-----|
| 1 | 1 | 7 | -1 | 1 | -1 | -1 | -1 |
| -1 | | 1 |] | -1 | -] | -1 | -1 |
| -] | -] -1 | -] | -1 | -] | _} | | - |
| -1 | 1 | -1 | -1 | -i | -i | Ιi | lil |
| l i | <u>-i</u> | i | -i | -1 | -1 | 1 | -1 |
| 1 | -1 | -1 | 1 | -1 | -1 | -1 | |

FIG.11B FIG.11C FIG.11D FIG.11E

| | | • | VALUE |
|--|--|---|--|
| | | COLUMN C | ORRESPONDING |
| DISPLAY | RESULT OF | | THE EFFECTIVE |
| PATTERN | MLA | VOLTAGE | VOLTAGE |
| R1 R2 R3 R4 R5 R6 R7 | OPERATION | PATTERN | R1 R2 R3 R4 R5 R6 R7 |
| 1 | -1 -1 -1 -3 -3 -5 -3 -1 -3 1 1 -5 -1 -3 -1 -3 | 1 1 1 1 1 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 4 |
| | -3 1-3-1-1-3-5 1 -5 3-1-3 1-1-3-1 | 3-1 1 1-1 1 1 1 | 4 |
| 1 1 1 1-1 1 1 | 1-3 1-1-1-3-5-3 | -1 1-1 1 1 3 1 1 1-1 1-1 1 1 3 3 | 4 4 4 4-4 4-4 |
| 1 1 1 1-1-1 1 | -1 -1 -1 1 1-1-7-1 -3 1 1-1 3 1-5-3 | 1 1 1-1-1 1 3 1 | 4 |
| | 1 1-3-1-5-3-1-3 | -1-1 1 1 3 1 1 1 1-1 1 1 1 1-1 3 | 4 4 4-4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 |
| | -1 3-5 1-3-1-3-1 -3 5-3-1-1 1-1-3 | 1-1 3-1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 4 4 4-4 4-4 4 |
| | 3-1-1 1-3-1-3-5 | -1 1 1 -1 1 1 1 3 -1 -1 -1 1 1 -1 1 3 | 4 4 4-4-4 4 4 |
| 1 1 1-1-1-1 1 | 1 1-3 3-1 1-5-3 -1 3-1 1 1 3-3-5 | - - 1- 1- 3 1 - - 1- - 1 3 | 4 |
| | 1 1 1-1-1-7-1 1 | -1-1-1 1 1 3 1-1 | 4 4 - 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 |
| | -1 3 3-3 1-5 1-1 -1 3-1 1 1-5-3 3 | 1 1-1 1-1-1 3 1-1 | 4 4-4 4 4-4 4 |
| 1 1-1 1 1-1-1 | -3 5 1-1 3-3-1 1 3-1 3 1 1-5-3-1 | 1-3-1 1-1 1 1-1 | 4 4 - 4 4 - 4 4 4 |
| | : · | | |
| -1 -1 1 -1 -1 -1 -1 -1 1 -1 -1 1 | -3 1-3-1-1 5 3 1 3-5-1 1-3 3 1-1 | 1-1 1 1 1-3-1-1 -1 3 1-1 1-1-1 1 | -4-4 4-4 4-4-4 -4-4 4-4-4 4 4 |
| -1-11-11-11 | 1-3 1-1-1 5 3-3 | -1 1-1 1 1-3-1 1 | -4-4 4-4-4 4-4 -4-4 4-4-4 4 |
| -1-1 1-1-1-1 | -1 -1 -1 1 1 7 1 -1 1 -3 1 -1 -1 -3 3 5 | 1 1 1-1-1-3-1 1 | -4-4 4-4-4-4 -4-4-4 4 4 4 4 4 |
| -1-1-1 1 1 1-1 | -1 -1 3 -3 1 -1 5 3 | 1 1 -1 1 -1 1 -3 -1 | -4-4-4 4 4 4-4 -4-4-4 4 4-4 4 |
| -1 -1 -1 1 1 -1 1 -1 -1 -1 1 1 -1 -1 | -1 -1 -1 1 1 -1 1 7 -3 1 1 -1 3 1 3 5 | 1-1-1 1-1-1-3 | -4-4-4 4 4-4-4 |
| -1 -1 -1 1 1 1 -1 -1 -1 1 -1 1 -1 | 3-5 3 1 1-1 1 3 1-3 5-1 3 1 3 1 | -1 3-1-1-1 1-1-1 -1 1-3 1-1-1-1 | -4-4-4 4-4 4-4 |
| | 1-3 1 3 3 1-1 5 | -1 1-1-1-1-1 1-3 1 1-1-1-3-1-1 | -4-4-4 4-4-4 4 |
| -1-1-1-1 1 1 1 | 3-1-1 1-3-1 5 3 | i i i i -3 i | -4 -4 -4 -4 4 4 4 -4 -4 -4 -4 4 4-4 |
| -1-1-1-1 | i i-3 3-1 i 3 5 | -i-i i-i i-i-i-i-3 | -4-4-4-4 4-4 4 |
| -1 -1 -1 -1 1 -1 -1 -1 -1 -1 -1 -1 1 1 | -1 3-1 1 1 3 5 3 5-3 1 3-1 1 3 1 | 1-1 1-1-1-1-3-1 -3 1-1-1 1-1-1-1 | -4-4-4-4-4-4-4 |
| | 3-1 3 1 1 3 5-1 3-1-1 5 1 3 1 3 | -1 1 -1 -1 -1 -3 1 | -4 -4 -4 -4 -4 4 -4 -4 -4 -4 -4 -4 -4 4 |
| -1 -1 -1 -1 -1 -1 | 1 1 1 3 3 5 3 1 | <u>-i -i -i -i -i -3 -1 -1</u> | _4 -4 -4 -4 -4 -4 -4 |

FIG.12A

ROW ELECTRODE SELECTION PATTERN (ORTHOGONAL FUNCTION D)

| DR1 | DR2 | DR3 | DR4 | DR5 | DR6 | DR7 | DR8 |
|-----|-----|-----|--------|-----|-----|-----------|-----|
| 1 | -1 | -1 | 1 | -1 | 1 | -1 | - 1 |
| 1 | 1 | -1 | -1 | 1 | -1 | -1 | -1 |
| -1 |] | | _1 | _1 | -] | -] -1 | |
| | - | 1 | i 1 | 1 | -1 | -1 | i |
| -i | 1 | -1 | -1 | 1 | -1 | i | 1 |
| 1 | -1 | 1 | -1 | 1 | -1 | 1 | -1 |

FIG.12B FIG.12C FIG.12D FIG.12E

| | | | VALUE |
|---------------------------------|---|---|---------------------------------------|
| DISPLAY | RESULT OF | ELECTRODE T | CORRESPONDING O THE EFFECTIVE |
| PATTERN R1 R2 R3 R4 R5 R6 R7 | MLA OPERATION | VOLTAGE PATTERN | VOLTAGE R1 R2 R3 R4 R5 R6 R7 |
| | -1-1 1-3-3-5-3-1 -3 1-3-1-1-3-5-3 -1-1-1-1-1-1-7-1 1 1-3-1-5-3 -1-1-1-1-5-3-1-3 -1-1-1-1-1-5-3 -1-1-1-1-1-5-3 -1-1-1-1-1-5-3 -1-1-1-1-1-1-1-1 -1-3-1-1-1-1-1-1 -1-3-1-1-1-1 | 1 1 1 1 3 1 1 1 1 3 1 1 1 1 1 1 1 1 1 3 1 1 1 1 1 1 3 1 | 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 |
| | -3 -3 -3 -1 1 -1 | | |

DISPLAY PATTERN OP- ALL- ALL-TIONAL ON OFF REVERSAL PRIOR ART FIG. 13 OPTIONAL OPTIONAL OPTIONAL OPTIONAL ONE-TIME SCANNING (FIELD) 1/2 CYCLE Fı(t) +Vrh $F_2(t) - Vri$ F₃(t) G₁(t) G₂(t) G3(t) F4(t) $F_5(t)$ F₆(t) F₁(t) F₈(t)

FOURTH CYCLE W3 **W**4 ₹" THIRD CYCLE W3 **W4** × FIG. 14 PRIOR ART SECOND CYCLE W3 **W**2 **∑**⊏ FIRST CYCLE **W**2 W3 ₩ M

W-3528